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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/665,767    09/20/00    CARNAHAN

J    RD-27,100

006147    MMC2/1108  
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EXAMINER

CYGAN, M

ART UNIT

PAPER NUMBER

2856

DATE MAILED:

11/08/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/665,767

Applicant(s)

CARNAHAN ET AL.

Examiner

Michael Cygan

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.                      6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because Figures 1 and 2 require legends descriptive of the numbered boxes to be present in the drawing. See 37 CFR 1.83 (a) and 37 CFR 1.84 (o).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 9-29, 31-33, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miroslav (US 6,296,771 B1) in view of Nielsen (US 6,175,409 B1); the former document being a continuation-in-part of the latter document. Miroslav discloses the claimed invention, an analysis system and method for polymer weight determination which comprises injecting a known amount of sample into an analysis system containing a GPC (size-exclusive; see column 1, lines 48-49; column 14, lines 52-64; column 18, lines 47-48) column, a concentration detector and a molar mass detector (such as a differential refractive index detector and a light scattering detector, see column 20, lines 26-39); wherein a high molecular

weight fraction is separated with minimal dispersion and analyzed. See entire document. Miroslav does not disclose the total analysis time.

Nielsen discloses the total analysis time for the above-disclosed system (showing minimal dispersion; see Figure 8) and method to be "not more than 1 second per sample" for determining average molecular weight if desired; see column 23 through column 24; see also columns 40-41.

Since Miroslav is directed toward the same system and method of Nielsen, it would have been obvious to use the time structure of Nielsen in the invention of Miroslav to achieve the speed of analysis as disclosed by Nielsen.

With respect to claim 3, the examiner takes Official Notice of the use of different synthesis techniques of polyester as being well known in the analysis art, and the use of polyester synthesized by any known technique in the invention of Miroslav in view of Nielsen would have been obvious to one having ordinary skill in the art at the time the invention was made since Miroslav discloses the use of polymers in polymerization product mixtures.

With respect to claim 20, Miroslav discloses a dynamic light scattering detector, and Nielsen discloses that multiple angles can be used for light scattering measurements, see Figure 8.

With respect to claim 21, Nielsen discloses sequential analysis using detectors [130,132]; see column 38 and Figure 6.

With respect to claims 22, and 33, while Miroslav and Neilsen disclose online techniques, the examiner takes Official Notice of the equivalence of offline and online techniques in the analysis art, and the use of either of these techniques would have been obvious to one having ordinary skill in the art at the time the invention was made.

3. Claims 4-8, 30, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miroslav in view of Neilsen as applied to claim 1 above, and further in view of Fyvie (US 5,214,183). Miroslav in view of Neilsen teaches the claimed invention except for application to aromatic polycarbonates. Fyvie discloses a method of determining the average molecular weight of aromatic polycarbonates (from 1,1-bis(4-hydroxyphenyl)ethane among other starting compounds, and dissolved in a suitable solvent such as benzene) using GPC. See columns 2 and 3, especially column 3, line 36; see also column 5, lines 10-22; column 8, lines 34-38. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use polycarbonates in the system and method of Miroslav in view of Neilsen, since Fyvie discloses that aromatic polycarbonates are suitable samples for GPC molecular weight analysis, and that such analysis is beneficial in characterizing an aromatic polycarbonate.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maugans (US 6,176,952 B1) discloses the analysis of polyester and polycarbonate samples using a fractional analysis column equipped with both a refractive index detector and a differential viscometer detector for molecular weight analysis. Schauder (US 6,303,688 B1) discloses measurement of polymeric  $M_w$  and  $M_n$  through GPC. Dadgar (US 6,235,844 B1) and Canich (US RE37,400 E) disclose determination of polymeric  $M_w$  through GPC using a refractive index detector and a light scattering detector. Knobloch (Analytical Biochemistry 1997) discloses the use of a multiangle light scattering detector for size-exclusion chromatography in molecular weight determination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is 703-305-0846. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 703-305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Art Unit: 2856

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

mtc

mtc  
November 1, 2001

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800